

DRAGON USER

International edition

The independent Dragon magazine

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July 1985

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Subscriptions
UK £10 for 12 issues
Overseas (surface) £14 for 12 issues

ISSN 0305-9077. Telex 296279
Dragon User 12/13 Little Newport Street,
London WC2E 9PP

US address: c/o Business Press
International Ltd 205 East 42nd St. New York
NY 10017

ABC

Published by Business Press, Best Press
Ltd (c) Copyright 1989
Typesetting by Christine Peters, Christine
Books, Printed by Dean Fisher, Richmond,
UK. Bound in the USA by
Dutton, by S.M. Distribution, London
SNA 01 234 6411. Telex 261643

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medicine

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This month's competition looks like
Gordon Lee got it all backwards - but if
you can sort out the answer, you can
win one of 20 copies of Design Design's
Approach a Revving

Editorial

This HWing that Competition had taken delivery of a 128K Dragon
prototype may not cause much of a ripple outside Dragon circles.

But a Dragon 128K is far more than just an indication of how far
computers, like clothes, follow the dictates of fashion.

For one thing it shows that something can be done with the Dragon
- there is life after the 64.

Those readers who managed to catch a glimpse of Eusebius at
Dragon 200 at the last 6400 show will remember that there seemed little
to write home about at the time.

The case may have been restyled, but the keyboard was the same. So
were all the internal workings - it was just a 64 in a new box. The only
real difference is the addition of an LED to show when the computer is
turned on.

But it now turns out that the 64 e RAM chip could accommodate 128K
of memory all along. So why hasn't Eusebius managed to put the extra
chips in?

Let's face it, given the choice between a stylish case and a little red
light on the case panel, and an extra 64K of memory on the other what
would most Dragon users choose?

Another thing the 128K prototype proves is that Competition at least
is willing to show some commitment to the continued development of
the Dragon.

On the software front, companies like Microdeal, Adventure Interna-
tional, Datacom and many others are also still supporting the Dragon -
although most of the games being released at the moment are
conversions of titles for other machines.

But the majority of the support, which is responsible for the continued
existence of the Dragon, doesn't come from any of these companies -
it comes from ordinary Dragon users. With all of its faults, the 6400 has
thousands of loyal supporters.

Without the sort of commitment Dragon users have been showing
over the last 12 months, there is no doubt that the machine would have
been relegated to the museum like the Oric, the Lynx and others.

Letters

This is the chance to air your views — send your tips, compliments and complaints to Letters Page, *Dragon User*, 12-13 Little Newport Street, London WC2H 9PP

Write on

WITH REFERENCE to my "Writer" program published in *May's Dragon User*, readers may be interested to know that I can supply copies of *Isotype 1 and 2* on a single cassette at £2.95 including postage and packing.

Please write to me at the address below and not at the one contained in the listing.

Phil Brooks
1 Boulton Close
Dorset
Northants

and on

MAY I congratulate Phil Brooks on his excellent 5th anniversary anniversary program.

It is a pity that the manufacturers did not include a similar feature as a standard part of the Dragon's basic equipment.

May I point out that should error in the accompanying article, I thought EXEC 30595 causes the machine to crash. The machine code begins at location 30587 and therefore you should EXEC 30587 to install the program. Similarly you should OS/WM/WH/TCR 30587 30767 30587. Then upon reloading typing EXEC will install the routine.

S J Jones
35 Redington Avenue
Great Brix
Worcestershire WR2 2HP

Users USA

THE HITS have a Dragon User Group in the United States. The name of the group is "DRAGONET" and currently has a membership of approximately 50 subscribers. The group, headed by myself and I am currently seeking the support of Dragon User Groups throughout the world. DRAGONET will be publishing a monthly newsletter for all of its subscribers as well as other user groups. A national user group will greatly extend this as the US.

We are currently expanding our facilities to incorporate a Users Bulletin Board System

via Internet and will be supporting users of OS 9 FUJIK and other features of the Dragon which has not been seen here or name here in the US. Subscription is free and open to all.

All enquiries should be made to Dragon Users Group c/o Wayne H. Schmitt
1011 Louisa Street, New Orleans LA 70117 USA.
Wayne H Schmitt

OS9 America

DRAGON USERS running OS9 may be interested in the existence of an American OS9 User's Group. The address is OS9 Users Group PO Box 7588 Des Moines Iowa 50325 USA.

Membership costs \$25 per year (but may be more for non-US residents) and for this you get two or three issues of the newsletter and access to various public domain OS9 software programs of which there are 10 disks currently available and 25 or more planned for the near future. The group charges \$3 per disk for handling but again this may be more for postage outside the USA.

Robin Harnden
113 Valley Road
Loughborough
Leicestershire LE11 3PY

Convert

I REFER to the "Conversion" program on page 31 of the April issue.

Users in the USA, the results of the program's conversion may cause some confusion. When dealing with Imperial gallons the factor 4.545 will have to be used instead of 5.7854 or less 758.770 640 and 650.

J. J. Jones
10 Highland Drive
Milton
Essex CM1 6NR

Patch problem

REGRETTABLY the problems got at the DRAGONDOCS

patches in the May 15 issue of *Dragon User*. The following are the corrected address (changes underlined).

Paul 1 -0084 CC
Paul 2 -008C D0 8D C0
CC

Problem 2 Patch 1 -00FF

There was also the error where the documentation and patches did not keep pace.

Problem 4 replace line +179D with +1795 D5 D2 D2. Only the latter error should have caused a problem, resulting in PROTECT not operating correctly.

Paul 1
4 Redwood Drive
Preston
Cumbria LA7 7SL

Fantasy Fight

IN REPLY to Mr. Vines plea for help in May's *Dragon User* I have discovered three useful memory locations which make Fantasy Fight somewhat easier as even the best gamers players would have difficulty in entering more than 15 of the 25 screens.

After loading 110 games normally press RESET and POKER 45008 LIVES (5-15), POKER 45008 WEAPONS (5-15), POKER 45007 START ROOM (5-15) 36 is top room. Then EXEC 24718.

I have that 16 have entered then the code then are shown in program memory area which could cause crashing. Also if more than 127 weapons/lives are collected you are left with none.

Clive Brock
5 Harnett Close
Greenfield
Bucks MK12 5DB

Users and repairers

HAVING JUST read the June issue of your magazine, I would like to express the points raised in your Editorial.

I can only agree that software for the Dragons is becoming hard to find but I don't think that the loss of a company like Webster who have used out

let for a long time, is any great loss to the Dragon users.

There is still a lot of very good software being produced even if much of it is available only by mail order and a few more are leaving the shop doesn't necessarily mean that it is just about to run completely.

However the main point that you make lack of service and repair facilities for the Dragons are badly needed.

We started the Dragon Users Group about a year ago with the intention not only of providing a means of communication between Dragon owners, but of providing help with Dragon-related problems and that most certainly includes repairing our Dragons if we can!

We aren't a commercial group. Our £15 to join membership charge covers only the cost of producing and distributing the monthly copy of *Dragon Update*, but we guarantee to do our best to find answers to ANY Dragon problem and that means hardware as well as software. Having several electronics engineers in the Group we can carry out most Dragon repairs at cost plus postage (I've had three to repair this week alone) and in a lot of cases we can advise members on diagnosis and repair of their own machines. This service is naturally restricted to Group members it should be able to make it a general offer and in any event I have no objection to its being on the basis of these few computers with (try to) make it being out of computer repair work but we DO need, and we will continue to do so as long as there is a Dragon owner who needs it.

If anyone is interested in joining the Group all they need to do is write or phone me for details. Although we started off as a national group we now have members in most European countries and in the States and even best aged range from 11 to 74. We try to cover all possible interests.

Paul Givens
National Dragon Users Group
5 Redwood Drive
Preston
Cumbria

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Add-ons and repairs

COMPUSENSE has appointed Race Electronics as a National Service Centre for the Dragon 32, 64 and peripherals.

In addition Compusense will be distributing a wide variety of hardware add-ons made by the Welsh company.

Ted Corgychal, Compusense's managing director said that Race had been appointed because they were manufacturing Dragons last year, and they know a lot about them.

Dragon owners, who wish to take advantage of the new service should contact Race Electronics direct. There will be a minimum charge of £20.

Compusense will also be setting up a local repair network and would like to hear from any companies capable of doing such work.

The new add-ons from Race include an RS2000 interface Unit, a Salween ROM Cartridge, an EPROM Programmer 680 for the Dragon 32, and a Dragon replacement Box System for the Dragon 32 and 64.

Race also manufacture a floppy tape recording system and prototyping cards for the DIY enthusiast.

The RS2000 interface will allow communication between a Dragon 32 and any other micro which uses the RS2000 standard. It also means a 32 can control serial line printers or connect to compatible modems. It will sell for around £20.

The Salween ROM Cartridge allows the user to hold up to four sets of EPROM banks simultaneously in memory for instant access. It will cost around £45.

The EPROM Programmer will allow users to tape their own EPROM chips at a cost of around £30.

The Expansion box will allow the use of up to four cartridges at the same time. Each Cartridge can then be individually activated from the keyboard. It will cost around £160.

The floppy tape recording system will give the users far faster access than audio cassettes can provide, at a lower price than disk.

The prototyping cards are available with the plating at £5 and gold plating at £7. Compusense will also be selling a Project Case to protect the cards at £5.

Race Electronics are at Race House, Llanelli Road, Talbot Green, Poreycroft, Mid Glamorgan CF7 8YF.



The Race floppy tape recorder

National user group

THE NATIONAL Dragon Users Group costs £7.50 per year, which includes a monthly news letter covering software and hardware projects, hints and tips, articles and reviews.

Members can also write or phone in with any Dragon problems. Write to: Paul Gwyn, National Dragon Users Group, 6 Haverle Road, Wokingham, Sussex.

Bulletin north east

COGO 885 is a new bulletin board designed for Cogo and Dragon users, also available in the North East of England.

The system runs on a Cogo to present out a Dragon 64 and is hosted in at the near future. (Board rate is 300,000 bits with 7 bit even parity, but either 1200/75 or 1200/1200 baud rates will be added once the 64 is on line. There are the usual message facilities allowing 2, 24 or 32 lines. Users can also upload and download basic programs.

The board goes on line at 9 pm Mondays to Thurs days until 10 am. From 11 pm Fridays, 1 single open until 11 am Monday morning.

COGO 885 can be contacted on 091 260 1944 or write to: 180 Bickelstone Road, Hensley, Newcastle on Tyne NE8 5EP.

COGO 885 can be contacted on 091 260 1944 or write to: 180 Bickelstone Road, Hensley, Newcastle on Tyne NE8 5EP.

Cotswold comms

COTSWOLD Computers has two new communications packages for the Dragon 32 and 64.

The first is a full featured wordwrap package containing a British Telecom approved modem and a software package.

The cartridge software

allows log on and off and terminal mode. It also lets the user save (print) screens to tape, print the screens, print messages on an offline buffer and download software.

The Printout Verbatim package costs £26 inclusive of VAT and delivery.

The other product from

Cotswold is MODCOM, a data communication package running on 6809 for the Dragon 64.

A cassette based program it also supplied which gives access to 6809 disk file for Dragon 64 and there is a comprehensive manual included. MODCOM costs £26.95.

Cotswold Computers is at Middle Row, Chipping Norton, Cotswolds, Oxon.

Dragon 128K

COMPUSENSE has taken delivery of a prototype 128K Dragon.

The machine is basically an upgrade from a 64 to a 128K micro. The RAM chip used in the Dragon already has facilities for banking when needed, so the upgrade is just a matter of adding extra memory chips and changing the address.

Additionally Compusense will also be developing an upgrade for the Dragon 32 which will make it a 64K machine. Apparently the 32 cannot be given 128K because of the video chip used.

Compusense's next project will be an optional disk controller and hard disk interface. Compusense is at PO Box 856, 2840 Green Lane, London H13 5AA.

Adventurer's Club

THE ADVENTURER'S Club is a new organisation aimed at improving the sufferings of adventurers.

Membership of the club costs £10 per year. This includes 12 issues of the Member's Dossier, a monthly newsletter aimed at keeping readers informed of the latest happening in the adventure world.

The Dossier will also include reviews and tips for adventures. The first issue, 15 pages long, includes the first part of an in-depth study of 5 Dragons for the Dragon 32/64, with a number of very useful hints.

Henry Myster, the Adventurer's Club Secretary, himself started with a Dragon and says that he has a great deal of fondness for it.

The Club also runs a phone in adventure help service for members on 05-784 1267.

The Adventurer's Club is at 660 Isabella Road, London NW9 3PH.

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Dragon adventures

Jason Orbaum takes another trip to the vaults to look at some classic Dragon adventure games

Pi-manic

Adventure Pi-Manic
Supplier: Aurora

THE ORIGINAL Pi-Manic adventure takes the role that spawned off a genre of similar programs with prices none of which quite come up to the splendour of the Golden Sun disc of Pi-Manic in gold by Bertram Tootle.

However if the real prize didn't quite come up to the standard the adventures almost without exception were about \$500 per cent better!

Pi-Manic has very little in terms of code several random elements stunningly beautiful descriptions and takes the most amazing length of time to play.

The wizard for the time expenditure is that the rewards are obviously great but that the player will spend a long time thinking as there is really very little to think about that can logically be worked out. The problems seem to rely on trial and error tactics and there is the Pi-Manic (an amusing pun) to throw an extra spinner at the world.

After you have worked out the movement system (this is possibly the best puzzle in the adventure) making a move takes a super fast 40 seconds giving one just enough time to lob the puzzle into a passing motorcar — a process I heartily recommend! It is a game of course about the time. It is really about 30 seconds!

Given the superb adventure rate available for the Dragon why you should ever give this one a second look escapes the unless of course you think you could win this \$5,000.



Wizard

Adventure: Knight of the Wizard
Supplier: Microcad

THIS IS an adventure that puzzles me — I know what I have to do, and have almost done it but haven't had to solve any problems yet!

The game is a real-time action 3-D/2-D game it is also a pure text adventure of a first sight considerable verbosity.

There are two basic aims and therefore two ways of playing the game. The first is to collect all the lemons in the adventure's domain and take it to the sanctuary and the second is to kill all of the various inhabitants of the area (except the unicorn who is supposedly friendly) in a bloodthirsty and noisy series of battles.

The game talks to you (not very often and with a very limited vocabulary. I must admit) and has several other things and things to keep you awake. The presentation is superb even allowing you to view information that has recently scrolled off the screen.

The puzzle (that's the best that names your English course) into things that the computer understands is fairly standard Pi-Manic in its (Pi-Manic stuff here) and the response being in machine code is really immediate.

The adventure when it was released early in 1985 was the best available for the Dragon. Since its release it has been overshadowed by some incredibly good adventures. This does not mean that it is not an adventure worth

buying a most certainly is.

To turn up think not an adventure for the puzzle play or more for those of us who like a colourful journey around another land putting only to pick up treasures and of course, massacre the odd one about.



Franklin

Adventure: Franklin's Tomb
Supplier: Salamander Software

ANOTHER classic adventure this time for the adventures who have got past the huge range of their stuff but are not yet ready to take on the multi-task forces of a Zork or Superball (neither of which unfortunately look like ever becoming available to the Dragon owner).

This game is the first in a series of three (the equally competent sequels are Lost in Space and Fury Mountain) and the adventure is cast in the role of Alan Diamond, private detective. You have to correct a male (pang). Please come. You're our only hope.

It is impossible to review all the other Dragon adventures on the market but here are my own personal ratings for several more. These are, of course, only personal as if you disagree with several of my reviews then these will probably not be of use to you.

The letters used are here explained:

GENERATION refers to the type of game along these lines:

1st) Text only (the parent's adventure)

2nd) Arcade adventure (3-D or 'Tutankhamun'-style)

3rd) Text with pictures (for those with little imagination or descriptive power)

4th) Multi-player adventures

PARADOX refers to the complexity of the sentences the game can understand.

LOGIC refers to the puzzles and whether they can be considered to be fair.

PLAYABILITY is a rating of how much chance for game loss of sleep

ing you up until the small hours playing.

WOOD is a rating of the pictures on a 2nd or 3rd generation adventure, and the text on a 1st generation.

The GENERAL rating is the same as that which would accompany a full review, and like all the others is out of five.

As a final note, many of these adventures have been available for quite some time now and as such may be difficult to acquire. Also, it should be pointed out that during grading no allowance has been made for age of program.

Adventure: The Clockwork Incident

Supplier: Salamander Software
Generation: 1st

Paradox	2
Logic	1*
Playability	3
Miscell	2
General	2

Adventure: Lost in Space (Paradox 3)

Supplier: Salamander Software

Generation: 1st	3
Paradox	3
Logic	3
Playability	4
Miscell	3
General	3

Adventure: Fifty Business (Franklin 3)

Supplier: Salamander Software	
Generation: 1st	3
Paradox	3
Logic	4
Playability	3
Miscell	4
General	4

Adventure: The Emperor Must Die

Supplier: Phoenix Software
Generation: MIA (there are two programs, an arcade game and an adventure, the successful completion of one takes you into the other, which is a 1st generation adventure with map on call, all ratings apply to the adventure)

Paradox	1
Logic	2

with directions is a greyward crystal. Suddenly the ground goes very beneath you and you're in the tomb.

The visual instructions that come with the game are done in a hilarious Raymond Chandler style, but this praise also is totally different from that used to describe the locations. Indeed the descriptive theme does not re-appear with in the adventure.

But what the game lacks in humor, it makes this make up for in puzzles of varying complexity from a fairly easy starter to the brilliance of the gallery.

Round the game, a pleasure to play from beginning to end, and although it was written in Basic, the responses were tolerable, and the screen display excellent (the format used has since been copied on several occasions).

I recommend this game to all but the fastidious adventurer who will find it too easy.



Doom

Adventure: *Caverns of Doom*
Supplier: Microdeal

This Microdeal adventure was released at the same time as *Syzygy* (reviewed elsewhere) and although another big adventure (100 different rooms) is not as likely to become a classic.

However, that does not

affect the game's merits, and they are considerable. The descriptions are plentiful, I am verbose enough for me, and the general mood conjured up is ideal.

Your task is quite simply to escape from an abandoned and crumbling mine complex, however, that may be more difficult than it at first suspected.

The response is fast — the game is in machine code — and the screen layout is absolutely superb (given an black windowed screen).

Again, Microdeal have had the very good sense to tell the commands on the cassette play which saves a lot of time and energy hunting commands.

This is quite timely in an era when first generation (last only) adventures for the average adventurer. The game is selling for a liver and that is a liver that could be spent on many worse things than this.

It is available from your local Dragon supplier (if you still have one) or the Microdeal mail order service which appears to have been designed by Harold Peter, judging by my experience!



Syzygy

Adventure: *Syzygy*
Supplier: Microdeal

This is Microdeal's latest

adventure for the Dragon, and my initial impression is to see it as the best third generation (text with graphics) Dragon adventure available. If not the best third generation adventure I've seen for some time.

Back aboard the Death-Star the dark runs, you have already had one, near total encounter with Darth Vader and your strength is nearly gone. A huge task, lies before you as you attempt to destroy the Dark Lord of the Sun and escape the Death-Star.

No trouble with vocabulary — it is of them on the instruction sheet. It is a matter of using the right words at the right place.

The game is graphic: there are 300 locations to explore and over 250 pictures (as many of the corridors look alike) and the movement from location to location is instantaneous.

The screen (PMODE 4) is set out with an inventory on permanent display, a clear small picture for sight and the text input and cursor below all this.

The puzzles have been clearly thought out: the graphics have been excellently designed and the whole game plays superbly.

It is a great adventure, although admittedly very difficult and a pleasure to play. If the Dragon adventurer doesn't own this one then they ought to be ashamed of them-

selves — buy it at once!



Pulsar

Adventure: *Escape from Pulsar I*

Supplier: Channel 2 Software
This is one of the Orion Monthly mysterious adventure series so often mentioned in the Adventure Trail.

There one has the adventure on board a spaceship with a lethal alien who has escaped and killed all of the crew save you. All you have to do is escape in the shuttlecraft.

The game is played with text on the forces screen and the Dragon, old version (pay data) is played.

The display is very good except when printing up the location descriptions at which point it prints and flashes over briefly.

The game is well structured and written with puzzles of good design and increasing complexity although the descriptions of the locations leave a lot to be desired.

The response is fast, the puzzle simple but effective and the text just right. Almost yet better.

Channel 2's entire range has now been taken over by Adventure International — it is good to see they are still available.



Playability: 1	General: 3	Adventure: <i>Poldgarn's Glory</i> (in three parts on one cassette)
Mood: 4	Adventure: <i>Possession</i>	Supplier: <i>Shanda Software</i>
General: 1	Supplier: <i>Dragon Data</i> (I have noticed who now sells it)	Generation: 2nd, 1st and N/A (the third program is a series of tests) respectively
Adventure: <i>Download</i>	Generation: 1st	Parser: N/A, 3, N/A
Supplier: <i>Microdeal</i>	Parser: 3	Logic: 2, 3, 4
Generation: 2nd	Logic: 3	Playability: 2, 2, 3
Parser: N/A	Playability: 4	Mood: 2, 4, N/A
Logic: 3	Mood: 4	General: 2, 3, 4
Playability: 3	General: 4	
Mood: 3		
General: 3		
Adventure: <i>Time March</i>	Adventure: <i>Almanac II</i>	Adventure: <i>Wings of War</i>
Supplier: <i>Microdeal</i>	Supplier: <i>Microdeal</i>	Supplier: <i>Salazarware Software</i>
Generation: 2nd	Generation: 2nd	Generation: 1st
Parser: N/A	Parser: N/A	Parser: 2
Logic: 2	Logic: 3	Logic: 4
Playability: 2	Playability: 4	Playability: 4
Mood: 3	Mood: 3	Mood: 4
General: 4	General: 4	General: 4
Adventure: <i>The Ring of Darkness</i>	Adventure: <i>Ultimate Adventure</i>	Adventure: <i>Rainbow Flight</i>
Supplier: <i>Whitewash</i>	Supplier: <i>Microdeal</i>	Supplier: <i>Cable Software</i>
Generation: 2nd/3rd	Generation: 1st	Generation: 2nd
Parser: 3	Parser: 2	Parser: N/A
Logic: 3	Logic: 1	Logic: 4
Playability: 1	Playability: 1	Playability: 5
Mood: 2	Mood: 1	Mood: 3
	General: 1	General: 3

Looking through the Dragon's windows

Brian Cudge with two programs to help you put windows on your Dreamweaver

THE FACILITY to have several windows of windows or windows displayed at once is usually only found in the more expensive computers. The program presented here gives this facility on the Spectrum micro. Up to five separate windows can be used at once and there are several more Basic commands to handle closing and utilizing the windows. The window facility is not only very useful in programs that also comes in handy when debugging software. For example, two windows could be used

On one screenshot the top eight the bottom four lines be sent to the main window is done in the smaller one have independent attributes they fulfil their own course mathematical characters, and all are capable of working independently. Why does can overlap, but this is not generally very useful.

The program is funded only through FEMA and the local emergency. Once FEMA will

is made to initialize it and from then on, all the output goes to the current window. As far as this is defined on the whole screen, and so will not log any difference. To define your own window by WINDOW command is used. It has the following parameters: **WINDOW** *row1* *col1* *row2* *col2* where *n* is the window number (0 to 4), *row1* is the left edge (screen columns), and *col2* is the right edge (screen columns). The screen columns run from 0 to 25 and the rows from 0 to 4. *row1* includes the row of the window, and will not

[illegible][illegible][illegible]

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Dragon database

Ever wanted to put all your vital information — names, addresses, birthdays — on database?

Lee Noble shows you how

DRAGONBASE is a database designed to operate on the DRAGON2000 series with Dragon data DOS attached. The program may easily be adapted to operate with cassette storage by changing the load and save routines and removing the error check and disk error routines.

On running you will be presented with the MAIN MENU. From this menu you can:

- (1) Load a file
- (2) Construct a file or extend one which is already in memory
- (3) View the file which is in memory
- (4) Save the file which is in memory
- (5) Copy/print the file to the two different fields which make up one record in the database
- (6) Move to the disk editor which allows you to look at the disk directory, initialise a disk, add a file or protect a file

The loading and saving of files is very

easy. On selecting either (1) or (4) you are requested to enter the name of the file you wish to save or load. These names must be no more than eight characters long (you will not be able to enter more than eight characters) and must contain no spaces or punctuation marks. On entering an invalid file name you will be told of your mistake and the program will return to the main menu.

On selecting (2) you are initially asked to indicate whether you wish to extend or construct a file.

Construct file

Each file is split up into 200 records each of which has five fields. Each of the fields is given a name which is defined in (3). These names all relate to the information stored in the file. For example:

TITLE 1 Name
TITLE 2 Address

TITLE 3 Telephone number

TITLE 4 Birthday

TITLE 5 Other information

This file is storing information on people. You would enter the Name of the person under name, the address of the same person under Address and so on. Once the record of the file is completed you can go on and enter more records or return to the main menu. In the example above the information on 200 different people may be stored. Each person's record has five separate fields of information stored on them making a total of $200 \times 5 = 1000$ separate pieces of data in one file, each of which may be up to 80 characters long.

Extend file

The extend facility allows you to extend a file as the name suggests. In the above example if you were to add and return to

```
10 REM *****
20 REM *****
30 REM *****
40 REM *****
50 REM *****
60 REM *****
70 REM *****
80 REM *****
90 REM *****
100 REM *****
110 REM *****
120 REM *****
130 REM *****
140 REM *****
150 REM *****
160 REM *****
170 REM *****
180 REM *****
190 REM *****
200 REM *****
210 REM *****
220 REM *****
230 REM *****
240 REM *****
250 REM *****
260 REM *****
270 REM *****
280 REM *****
290 REM *****
300 REM *****
310 REM *****
320 REM *****
330 REM *****
340 REM *****
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370 REM *****
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390 REM *****
400 REM *****
410 REM *****
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930 REM *****
940 REM *****
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960 REM *****
970 REM *****
980 REM *****
990 REM *****
1000 REM *****
```

```
1000 REM *****
1010 REM *****
1020 REM *****
1030 REM *****
1040 REM *****
1050 REM *****
1060 REM *****
1070 REM *****
1080 REM *****
1090 REM *****
1100 REM *****
1110 REM *****
1120 REM *****
1130 REM *****
1140 REM *****
1150 REM *****
1160 REM *****
1170 REM *****
1180 REM *****
1190 REM *****
1200 REM *****
1210 REM *****
1220 REM *****
1230 REM *****
1240 REM *****
1250 REM *****
1260 REM *****
1270 REM *****
1280 REM *****
1290 REM *****
1300 REM *****
1310 REM *****
1320 REM *****
1330 REM *****
1340 REM *****
1350 REM *****
1360 REM *****
1370 REM *****
1380 REM *****
1390 REM *****
1400 REM *****
1410 REM *****
1420 REM *****
1430 REM *****
1440 REM *****
1450 REM *****
1460 REM *****
1470 REM *****
1480 REM *****
1490 REM *****
1500 REM *****
1510 REM *****
1520 REM *****
1530 REM *****
1540 REM *****
1550 REM *****
1560 REM *****
1570 REM *****
1580 REM *****
1590 REM *****
1600 REM *****
1610 REM *****
1620 REM *****
1630 REM *****
1640 REM *****
1650 REM *****
1660 REM *****
1670 REM *****
1680 REM *****
1690 REM *****
1700 REM *****
1710 REM *****
1720 REM *****
1730 REM *****
1740 REM *****
1750 REM *****
1760 REM *****
1770 REM *****
1780 REM *****
1790 REM *****
1800 REM *****
1810 REM *****
1820 REM *****
1830 REM *****
1840 REM *****
1850 REM *****
1860 REM *****
1870 REM *****
1880 REM *****
1890 REM *****
1900 REM *****
1910 REM *****
1920 REM *****
1930 REM *****
1940 REM *****
1950 REM *****
1960 REM *****
1970 REM *****
1980 REM *****
1990 REM *****
2000 REM *****
```

But it's a given in the realm of online information you could find save the old you, long missed and return to it at a later stage in reality or selective information.

TABLE 1

There would be no point in entering a load of information if you couldn't get answers! In again. The WWW usually allows you to look at the information you have stored. But that's not all. Given again we will take the radio address telephone number example we used before:

You must first select which kind you wish to search through — the choices are:

- 1 Name
- 2 Address
- 3 Telephone number
- 4 Birthday
- 5 Other categories are

Let's call it **myContactManager**. Now we have to enter the search term. As this is our first name field we should enter a name. The program will now search through all the names found in all the records until it finds the name you entered. Of finding the search item it along with the rest of the information on that person will be displayed on screen (Name, Address, Telephone number, Birthday, Other, unknown).

If the search term occurs more than once it says two or more people share the same name; then the records on both or all people with that name that are contained in the list will be displayed. Wilson says most

people will be search them as a name are found the total number of finds will be displayed and the program will return to the menu items. The information displayed may also be printed out if a printer is connected as indicated.

Figure 1

If you select editor mode a black flashing cursor will appear to the top left of the screen. This cursor can be moved up or down with the cursor keys (↑ ↓) or the ENTER key is pressed while this cursor is flashing then the editor mode will be exited. If any other key is pressed then the information in the field that the cursor is pointing at will be cleared and the substitute information for that field may be entered. On pressing ENTER again the editing of the person field will be terminated and the black flashing cursor will appear at the top left of the screen once more. You can now edit another field or exit the edit mode (press ENTER). When you hit the exit mode the view mode will appear on.

Construct titles

With this facility you are able to give each of the five fields a name. In the above example field 1 is given the name NAME, field 2 is called ADDRESS and so on for fields 3, 4 and 5. The field name is also the title which is displayed on screen. Being able to change the field names allows the

database to be used for all sorts of things from names and addresses to cataloguing books or a secret collection.

Online edition

The disk editor makes life using the disk drive a lot easier. It shows you, for example, to initialize a disk or tell it to format having to end the programs can be basic.

Program notes

```

0500 Speed up pipes
1110 2000 Mail terms
3000-4300 Load file
6400 8000 Command line
9100 12000 View files
12400 16700 Save file
16800 18500 File command action
18800 20700 Disk action
19700-20800 Display state directory
20800 21800 Windows disk
21700-22800 Full file
22800 24700 File Placeholder gridoff
24300 27800 Search results
27800-28300 What file space has to be
        processed
28440 29800 Display error messages
29200 30400 Initiated machine code screen
        insert
30200 31400 Input routine
3120-32700 Print out information
32600-33400 Break key display
33000 35100 Exit routine

```

[illegible]

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Manic-Miner cheats the official version

Roy Coates gives the authorized cheat method

MANIC Miner was written & was designed that many people would give up trying to complete the game owing to some of the more difficult screens such as the wilderness. Because of this a cheat routine was written into the game which may be expressed as follows:

- 1 — Set the game running on the Gemini Cavern
- 2 — Press the P key to Pause the game
- 3 — Very quickly press the P key again this will start the game and will be taken as the first letter of the password which is **PHENOM**
- 4 — Now enter the rest of the Password **ENOM**. If you have been successful a text will appear at the bottom right hand corner of the screen
- 5 — At any time while you are playing the game you may access the cheat. All you have to do is press the

ENTER key. The game will freeze. Now press a key in the range A to V to select your screen.

Please note that there is only one version of Manic Miner and so this cheat will work on any valid copy of the game. For those of you who wish to make a permanent copy of the game with the cheat enabled and with unlimited lives read on.

Switch your Dragon OFF and then ON again ensuring that any cartridges are removed. Type in the BASIC program given below carefully checking that the DATA statements are entered correctly. Run the program and when prompted to press the **ENTER** key please check again your cassette player, press the **ENTER** key and the machine code routine held in the DATA statements will be saved to tape.

Again switch your Dragon OFF and then ON again, place your Manic Miner tape in

the cassette recorder and load the game with the command

LOADMAN 2000

When this has loaded type in the following **PORES**

**PORE AH0B85,AH0C
PORE AH0148,AH0A
PORE AH08E7,AH09**

These **PORES** will enable the cheat routine and give unlimited lives. **LOADMAN** the program that was saved from above place a blank tape in your cassette recorder and when ready to record type

LOAD AH00

A new version of Manic Miner will now be saved to tape and may be loaded in the same way as the original.

Finally, my thanks to all the people who have written to me regarding Manic Miner and Jentel Hill, your letters are very much appreciated.

```
10 FOR A = 5H600 TO 5H632 : READ B# : POKE A,B,WM : ON +B#
20 NEXT A
30 INPUT "Press ENTER when ready to save...";A
40 CLAVE# "SAVE",5H600,5H632,5H600
50 DATA 00,00,20,10,00,01,02,00,00,27,04,07,00,20,00,00
60 DATA 00,00,01,07,00,00,20,24,10,00,70,00,24,10,00,00,00
70 DATA 00,01,00,24,10,70,00,10,00,00,00,00,00,00,00,00
```

Address specific loading

another Roy Coates routine — how to put machine code programs just where you want them

THE ABILITY of the Dragon to load machine code programs into memory at an address specified by the user is obviously a very useful one. Unfortunately saving a portion of the Dragon's memory so that it appears on the tape as having a different load address has always been a bit of a problem. The machine code routine given here does just that. The routine given is necessary so that those using a without an assembler may choose any memory location as the origin for poking in the OpCodes here. This makes the listing very useful indeed.

The example shown has saved memory from 10000 to 10000 in tape but changes the tape descriptor block so that when it is loaded the code will load at 10000 with an **ORIG** address of 01100 where I start and make up the start and end addresses you wish the final tape copy to have and make, and make use the start and end addresses of the actual code in

memory replace **FILENAME** with the name for your particular program

0000	00	00 0000	000	NAM# PCN
0004	1000	0100		#00100
0008	A0	00	NLDOP	00
000C	20	04		00000
0010	A7	00		07
0014	00	00		NLDOP
0018	00	1000	ADD00	#00000
001C	00	0107		00107
0020	00	2000		#00000
0024	04	10		0
0028	00	0000		#00000
002C	04	10		0
0030	00	1000		#01100
0034	00	0100		00100
0038	00	0010		00000
003C	00	0000		00000
0040	00	0000		00000
0044	00	0000		00000
0048	00	0000		00000
004C	00	0000		00000
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0054	00	0000		00000
0058	00	0000		00000
005C	00	0000		00000
0060	00	0000		00000
0064	00	0000		00000
0068	00	0000		00000
006C	00	0000		00000
0070	00	0000		00000
0074	00	0000		00000
0078	00	0000		00000
007C	00	0000		00000
0080	00	0000		00000
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0088	00	0000		00000
008C	00	0000		00000
0090	00	0000		00000
0094	00	0000		00000
0098	00	0000		00000
009C	00	0000		00000
00A0	00	0000		00000
00A4	00	0000		00000
00A8	00	0000		00000
00AC	00	0000		00000
00B0	00	0000		00000
00B4	00	0000		00000
00B8	00	0000		00000
00BC	00	0000		00000
00C0	00	0000		00000
00C4	00	0000		00000
00C8	00	0000		00000
00CC	00	0000		00000
00D0	00	0000		00000
00D4	00	0000		00000
00D8	00	0000		00000
00DC	00	0000		00000
00E0	00	0000		00000
00E4	00	0000		00000
00E8	00	0000		00000
00EC	00	0000		00000
00F0	00	0000		00000
00F4	00	0000		00000
00F8	00	0000		00000
00FC	00	0000		00000



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Greater than— or less than?

Rob Lee provides some educational interest for Dragon users with children

UNDERSTANDING THE ideas of greater than, and less than, may come as second nature to Dragon users, but to children it is a concept which has to be learnt by rote, and the idea is often introduced by small group discussion of more than, bigger than, bigger than, bigger than etc, and then switching to using greater than in number conversations. Formal exercises of this sort often end the day.

A > B B < A
A < B B > A

Using the computer however, gives us the opportunity to generate further on children's thinking, for we can create the situation

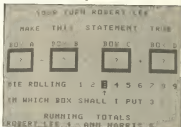
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and ask children to feed numbers into the boxes and test the validity of the resultant statement.

The following program is both a fairly gentle (and a lecher). The numbers to be put into the boxes are randomly generated, and the players decide which box to put them in.

Numbers chosen by the die obey blinding on the screen, for a time proportional to the degree of difficulty chosen. Hence, younger children can influence the number they get (by feigning gawk on the apparatus) when those checking/hander options correct. The type of statement (one of eight) you have to satisfy also relies on this choice. Obviously

A < B < C < D



is easier than
A < B < C < D

The points awarded to players who succeed in making the statement true vary with the play. In the above statement a winner would get the value in box C. In the second case, box A. So some degree of tactics can help you and additional motivation is added by this variability.

The game is already made fun and has a score again factor. It is not just a test

or bad, however. If at the end of a player's turn the statement is false and he cannot see why, then a moving screen display shows the appropriate substitutions to demonstrate the error.

Program Data

20-100 Two players
20-20 Two turns
20-40 Roll of screen
20-60 On rolling 3 roll requires
100-100 Every submission (turns buffer)
200-300 Instructions 2 data area 2

```

3 CLEAR 1000
4 BOX=1 BOX A BOX B BOX C BOX D
5 B4(1)=CHRN(120)+CHR(240+15,15)+CHR(120)
6 B4(2)=CHRN(120)+ " ? " +CHR(120)+CHR(120)
7 -CHR(120)+STR(BOX(1))+CHR(120)+CHR(120)
8 FOR X=1 TO 3: B4(X)= " " +B4(X)+ " " +B4(X)
9 B4(X)= " " +B4(X)+B4(X)+CHR(120)+ " " +B4(X)
10 -CHR(120)+CHR(120)+CHR(120)
11 FOR X=1 TO 3: B4(X)= " " +B4(X)+ " " +B4(X)
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MIKE GERRARD'S ADVENTURE TRAIL

TRILLER: FOR the price of one, this month we have the arrival of *The Ket Trilogy* from Incentive at the reasonable price of \$9.95. This made its debut at the second little show—and some of you may have seen it there—and perhaps even bought it. For those who couldn't make the show (though it's worth a fairly lengthy look). While at the show, incidentally, I was told by Montealt that I may have three Oregon adventures in the pipeline, so good luck to them and others who continue to be adventurous while some drop out of the market.

Three for one

Back to *Kat* which comes on just one cassette, the first side containing *Mountains of Kat* and *Temple of Vash* (side two having *The Final Escape*). The adventures can all be played independently as you can be working on all three at once with support at each one revealing a part of a message for you. Throughout all the three you'll be accompanied by Edgar, a magic western bug who has been placed in your neck with orders to ask his possessed help into you if you try to cheat—but along the way. Fortunately that doesn't seem to be the *SARE* routine. Aside from Edgar, what the adventures have in common is that they are all three fast-only accepting roles in the usual commands given by an Incentive form.

Each of the adventures also incorporates combat sequences, and while I don't normally care for this sort of intrusion (involving as it does an element of luck at least) here the sequences are brief and quite humorously done. You'll find you can fight all manner of creatures, humans and some famous elephants (horses were it they're in there, you can probably fight them, though it's frequently not a wise move).

The reason you have a creature called Edgar perched near your vulgar vein is that you were recently sentenced to death (or banish—though this was naturally a lie) and, you being an honest and intelligent adventurer! On the eve of your planned execution you must guess a *Go-or-Do* option and naturally you choose to *Go* (presumably on the grounds that an adventure where you choose to *Do* at the start would have limited appeal. Although you've been temporarily spared, no one's telling you chances (unless you have Edgar hovering at your heels).

The deed you have to do is to bring peace to the lands of *Kat* which are threatened by a group of mad monks living beyond the Mountains of *Kat* to the east of the village where you begin. A character called Vash is the leader of the monks called by the High Priestess, Delphia. Your overall task is to get the two of them out (though people feel they are

violated the wilderness code and wrong), and I was able to return to a hardware shop which did a nice line in carpets. Not so nice were the prizes which presented me (something the rear) and I wish the cartographer would let me part to have a look round upstairs in his coach house (but he won't) but yet anyway.

Temple of Vash takes you beyond the Mountains of *Kat* and has you going further eastwards with the hope of finding the Temple and bringing about the demise of Delphia. You begin this time in a passage, and if you think you can simply slip back from the second adventure to avoid the first one and respectively I'm afraid the passage is blocked by a boulder put there by the last guardian, a Zorlon. Your way forward is blocked by a river, but I should take you all of about 10 seconds to figure out how to cross it—I wish all the problems were as easy. On second thoughts, no I don't, as I wouldn't be much of an adventure then.

Temple

The locations and objects here are rather strange as you wander through a wilderness and suddenly meet up with an elephant, while further along is a sleeping skeleton and a small lampshade. Hardly the ideal mixture of stories, but at least it sets you some unusual problems. Your way forward is barred by some quickened, and met by a bit of edge over which danger is made. Sadly the rope is fixed to something at the bottom of the cliff, not the top, so climbing down is not recommended. Nor can you pull the rope up. The place is populated by little people called warts, and my first encounter with one of these was when I had a black oil spill over me. Fortunately I'd already taken preventive action, even if I hadn't realised what I was doing. Beyond there lies a cave, which is difficult to enter, but once through there you find yourself in a large room, off which is a small kitchen where no washing up has been done for years. Down some stairs at a ruby and a skeleton, with the skeleton somehow managing to block my way east, while upstairs there are lots of warts who meet on engaging you in combat. You can always run away after the initial attack, but even so I've somehow managed to get in a final blow as you go, and these deadly white ooze of your bloody pants.

Having been warned to death (several



THREE ADVENTURE PROLOGUES PRESENTED TO ENSURE THE COORDINATE *KAT TRILOGY*

Mountains of *Kat* simply requires you to get to the far side of the Mountains alive and we soon as I'd loaded that up the first thing I did was *QUIT*. This wasn't sheer cowardice but sheer cowardice gone. When you begin you're randomly allocated points for Powers, Energy and Luck and I thought I could do better. I have my total 831 and 6 points, so I *QUIT* and *QUIT* till I got a reasonable (respectable 8-22 and 12 points). Then a quick *INVENTORY* showed I was carrying some corn and the good old trusty sword, which is better than a rusty sword. I suppose *GOING COMING* showed that I had just two. I was on a road with fields either side and the village to the east.

Mountains

Making my way to a stable I tried to buy a horse from the stableman but he wouldn't let go for less than four coins so I obviously had to release my wealth somehow. Being told to someone pro-

times I read *The Final Mission* in which you confront the evil Vrak himself! Though your first task is to get out of the prison cell where you find yourself with just a cloak for company. Pretty easy, but then you find yourself in another cell with nothing more exciting than a lot of stone in the corner. The way out of here seemed a little unlikely, though you're sure to get it with the limited devices at your disposal. No sooner was I out of that cell though than I came face to face with something called the Gun Monster, and that polished me off with its trouble.



Though I wouldn't say *The Red Trilogy* was the best set of adventures I'd ever seen, I'd certainly recommend them as giving good value for money and promises enough to keep you going for ages. When originally published on the Spectrum a price of a video recorder was being offered to the first to solve all three tales, and although that's now been claimed you can take some comfort in knowing that it wasn't won for some considerable time after the adventures appeared.

Last room for letters this month, but here are a few tips and clues. Simon Wood of Whitehaven asked me for general help on *Sea Quest* and also wanted to know how to open the 1st door in the beach hut. General help is virtually impossible to give, unless you know exactly where a person is stuck and how far they've explored the adventure, so always try to ask fairly specific questions. The answer to Simon's specific question (written backwards) is this: **DAAM KAMAH TACOFY YKRC HTDZ CHUD Y**.

Joy Bailey of Eryl Den Moss Terrace, Gwileth is stuck in *Franklin's Tomb* unable to find a coin to use in the juke box and unable to get out of the puzzle room and obtaining the Copper Star. If you can offer Joy any pointers please let her know.

Rolf Michelsen of Sigdals vei 33 7120 Skander Norway kindly says thanks 'for an excellent page in an excellent magazine. Continue like this! We'll all try to. But it's completely stuck to me in *Atlantis of the Deep* and listed four questions: how to get the wizard from the frog; what to find the horizontal eight miles into the island; how to escape from the matriarch in the forest; and how to use the ships to get some useful results. I've answered Rolf on some of these which are in this lengthy reprint backwards, but if you too can offer advice on these problems then do write to him in Norway.

Some of you may know the name of Ned Sengewort, who runs the ASCII column of the National Dragon User Group, and Neil

writes to recommend a fine Tandy adventure for anyone with the Dragon's sister machine. He says *Pyramid 2000* is good being a Tandy implementation of the original *Crossword Drive*, while he also rates *Atlantis and Atlantis* even if he is unable to get past the guard dog in the latter. Help to Neil at 105 Occupation Road, Corby, Northants NN17 1SD.



Finally, to show that some people do actually read the column a letter from Ramsey whose adventure *The Trail of Arnold Blackwood* I reviewed some months ago. It's a good adventure, but I complained that it didn't have a solid routine. Programmer Colin Harris has now incorporated this and sent a new version to prove it, mentioning that copies are now also available from Touchmaster. If he writes a few more he may get about converting more Arnold adventures for the Dragon as ever is your dear readers. In fact, it's over and out.

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If you've got a technical question write to Brian Cudge. Please do not send a SASE as Brian cannot guarantee to answer individual inquiries.

Dragon Answers

Alldream

COULD YOU possibly tell me how to change Alldream options to allow saving and loading fast files to and from Dragon disk instead of cassette?

Jim Ferguson
15 Alcehall Road
Corkbank

IT IS not possible to change the Dream program to save to disk rather than cassette directly. However, one method is to have a basic program running which calls DREAM and also handles commands such as SAVE and LOAD. The start address of a Dream fast file can be found by 33-14000, 17941-17951-18000 (256K), assuming that Dream is loaded at its default address.

The fast file is then saved by SAVE, Alldream, 33,23176, 33776. The file can simply be loaded by LOAD, Alldream, as the vectors were saved with the file. Data will be restored automatically on loading.

On the edge!

I HAVE recently purchased the Electronic Arts Technology interface (and have obtained) a deluxe Dragon 32 by Mike Verity to allow simultaneous use of Dragon 32B with the interface.

The address decoding circuit is quite simple forward, but I cannot allow edge connectors of the type in the Dragon cartridge post 27 = 30.

Can you give me the address of a supplier as I have had numerous offers?

Malcolm Mann
43 Garsington Road
Oxford

YOU CAN contact 3 = 22 any edge connectors for your latest Tandy clone, or Magplus to name but two. These can be obtained direct to 3 = 22 via e-mail. The Tandy catalogue number is 379-9501, and the Magplus catalogue number is F2022. Magplus can be contacted on 0762 564158. Both should send you their CI.

CoCo

COULD YOU please tell me how what changes are required to run



the two featured programs on the TRS CoCo.

1. Autorun (July 1984 issue)
2. Break Any Double (October 1984 issue)

I would be most grateful as I have searched everywhere in vain.

David Paves
4 Pine Street
Barnstaple
Isle of Wight

THIS IS one of a number of letters from Tandy users asking about the Dragon 32B. The only reason these letters will not work as a ready solution is that the ROM machines used are of different addresses. A number of the Basic ROMs available for the CoCo is listed below.

The ROM calls you will need to change in the AUTORUN listing are as follows:

Dragon	Tandy
33664	44100
48752	42098
33648	48142
38192	33380
48804	42940
33632	48336
33176	48370
33660	48448

Autorun

WHEN I was working on a program for writing music, song, I found a very strange bug in the Dragon. I had set my Saxxox GP 1354 in program mode and intended to use a dual record to write a lot of tape. However, when the Printer was to Print the result, it started with a long garbled string of 01000000. After a lot of frustration, I finally managed to find that two consecutive record commands cause how far a string of characters to the Printer.

PS: For 2, 01000000

33 336AC 605
33 336AC 608
40 For 2

should just produce a line feed in line 40 but instead there is this strange string.

Could you explain this?

With kind greetings from a Dragon 3 for in Sweden.

And Lindgren
Bjorkholm
Sweden

THE PROBLEM you have found is indeed a bug in the Dragon 32B ROM which was cleared up in the 80 = ROM. The problem occurs because the Keyboard and Printer share the same call set PA, part of the Printer Service line is part of the same address as the 80 = ROM command used for generating sound. The bug is in the sound generation routines which occasionally stroke the printer line, which

results in the Keyboard code going out to the Printer.

How can you avoid the problem by modifying the part of 336AC and by keeping your hands off the keys whilst the program is running.

Define

I AM currently in the process of writing a program in Machine code for the Dragon 32. In this program I need to define my own BASIC words. My only problem is how to obtain variables and constants used by the words into machine equivalents.

I would be grateful if you could tell me how to do this without producing syntax and function call errors.

Simon Joyce
41 King Street
Bradley
Derham
West Midlands

THE FOLLOWING ROM routines can be used in your own programs to handle, for example, numeric variables.

33F 33433 returns the value of the following variable as an 8 bit number in the B register.

33F 33463 returns the value of the following variable as a 16 bit number in the X register.

If either value is not in range 0 to greater than 255 in the last case and greater than 65535 in the second case then a PC error is automatically produced.

Screen dumps

A NUMBER of letters have come in regarding problems with screen dumps.

The common problem is unexpected characters appearing in the middle of the screen dump, or unwanted blank lines appearing. These problems are all caused by the Dragon's printer routine. This has the annoying habit of outputting an extra 'space' character if it thinks the printer is still at the start of a line when a carriage return code is to be printed.

The solution to the problem depends upon how the original screen dump program was written. For basic programs, set the command PORE 158 to immediately before any PORE commands. This will also have the effect of disabling the auto-LF feature, so you should set the switches in your printer so that a LF is not required.

For machine code screen dumps change any call to the printer routine to 33ACD (LSP 434 10) to call to the routine at 48473 (LSP 4873). This latter routine simply outputs the character in the A register directly to the printer without intervening switches and CR characters.

Finally, you can also try typing PORE 65240 PORE 65260 AND 264 before using the screen dump program, this will disable interrupts and prevent extra characters being printed.

Palindromic number puzzles

Gordon Lee sets the challenge — Design Design provide the prizes

PALINDROMIC numbers can provide quite a few surprises! These as might be expected, are numbers which read the same forwards as backwards. Here are a few examples: 121, 14621, 40804, 14854, 1094321 and 40804084.

You may have noticed that as well as being palindromic, these numbers are also perfect squares. Even more curiously, their square roots are also palindromic. In fact, research shows that there is an infinite number of palindromic squares, and many of these appear to have roots which are also palindromic.

It is not difficult to program a computer to print out a list of palindromic squares, and if this is done it will be seen that the majority have an odd number of digits. Amongst the lower orders of squares there are just two with an even number: 686,881 which is the square of 830, and 867,832,328,736 — the square of 931,644. One particularly unusual palindromic square is 1111111111 — 105408381054081.

Curious cubes

If palindromic squares are curious, then palindromic cubes are even more so. In general, any cube that is a palindromic will have a palindromic cube root. (Note that this is not the same as saying that the cube of a palindromic will be palindromic). Every cube so far tested seems to obey this rule with just one exception!

Quite why this should be has not yet been demonstrated, nor does any proof exist that there is a rational exception to this rule, but all cubes under 2.8×10^{14} have been tested by computer and all but one agree with the rule. It will give this exception here as readers might enjoy solving this problem for themselves. Although it is not a particularly high number, its computation is slightly beyond the normal mathematical functions of the 'Cee

gen and so a slightly more sophisticated approach is required.

Just as there are an infinite number of palindromic squares, so too are there an infinity of palindromic primes. Every palindromic prime must have an odd number of digits with just one exception — the two-digit prime 11.

Number theorists will very soon realise that all palindromes with an even number of digits must automatically be evenly divisible by 11, and therefore — except for 11 itself — cannot be prime. Of particular interest are the four numbers 10901, 14741, 16861 and 18081. Apart from these all being palindromic primes, they have a common difference of 810.

Rep-units

Also of interest are the so-called rep-unit primes. These are numbers consisting of the single digit '1' and so are palindromic in a rather special way. Apart from 11, the only other known primes of this type were, for many years, 111111111111111111 and 1111111111111111111111. More recently the number consisting of 317 ones has also been shown to be prime!

There is one particular problem relating to palindromic numbers which has been of interest to mathematicians for many years. The advent of high-speed computers has enabled the problem to be attacked, but at, but the problem is an ancient nature still remains.

Take any positive integer, write down its digits in reverse order and add the two numbers together. Take this new total and repeat the procedure until the total becomes palindromic. For example, the starting number 126 becomes palindromic in just two steps:

126
621
747
747
747
747

The theory is that all numbers should eventually become palindromic, but this is far from proved. Of the first ten thousand integers tested by computer, all but 248 of them have formed palindromes in under 25 steps. Of these, the longest palindromic is 10,540,440,440,681 formed after 20 steps from the starting value 5599 and 7,048 for their reversals.

Small exception

The smallest number that does not form a palindromic is 196, and this has been computed beyond many thousands of steps without colligently forming a palindromic. This month's competition involves this value, 196. If this number is taken as described to the three hundred step somewhere along the number so formed at that stage will be the sequence of nine digits: 44-----44. Can you fill in the missing five digits?

Of course, you will have to work out the rest of the number too!

Prize

THIS MONTH'S prize is 30 copies of Design Design's arcade game *Revenge* — possibly the best implementation of *Star Wars* on any micro.

Rules

To win a copy of Design Design's *Revenge*, you must both show the answer to the competition and how to solve it with the use of a Basic program written on your Dragon. Please do not send in a cassette containing your answer.

As a *Revenge*er, complete the following sentence in 12 words or less: "I want to beat an Atmega because..."

Your entry must reach Oregon User by the last working day in July. The winners will be announced in the October issue.

April Winners

Four paragliders Oregon User readers managed to win themselves Oregon 44s donated by Compuseries. They are Christine Richmond of Preston, J. Bowen of Hugging, G. Hamilton of Steyningbridge and R. Gilling of Alveston. They will be receiving written confirmation soon.

```
10 C=0:R=0:W=0
20 FOR P=1 TO 100
30 IF P=1 THEN C=0:R=0:W=0
40 IF P=1 THEN C=0:R=0:W=0
50 IF P=1 THEN C=0:R=0:W=0
60 IF P=1 THEN C=0:R=0:W=0
70 IF P=1 THEN C=0:R=0:W=0
80 IF P=1 THEN C=0:R=0:W=0
90 IF P=1 THEN C=0:R=0:W=0
100 IF P=1 THEN C=0:R=0:W=0
110 IF P=1 THEN C=0:R=0:W=0
120 IF P=1 THEN C=0:R=0:W=0
```

This program should have appeared in June's computer page.

RETURN OF THE RING

THESE RESULTS
OF
THESE RESULTS
OF
THESE RESULTS
OF

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The Guardians of Shadr is defeated, the Hall opens and borders of the Evergebe lie in ruins. Now Ringbeasts, wielders of the Four Noble Rings, must face the greatest challenge: to return the Ring Of Darkness to its creators on the hidden planet Ringworld... And somewhere at the ends of time the forces of evil are preparing their revenge.

After one year of development, Windows is proud to present the most sophisticated games ever created for the Dragon 32. With an 100% in-house code, RETURN OF THE KING is an outstanding multi program based of superb high resolution colour graphics and advanced routines that allow you to communicate with your computer in complete sentences. You will face challenges and adventure as you and your Dragonoid companions travel a mysterious planet and brave the dangers of an amazing three-dimensional forest scene. An epic adventure controlled by the wealth of detail and graphics.

Mary South moved from
north.

Please note: RETURN OF THE RING is a complete adventure. You need not buy THE RING OF CAMERON to play it.



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Review of the Book
 "The Mapped Earthquake"
 Kenneth Cook

Abstract

Abstract

Table 6

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